



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-0482; Directorate Identifier 2012-NE-14-AD]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Rolls-Royce plc (RR) RB211-524G2-19; RB211-524G2-T-19; RB211-524G3-19; RB211-524G3-T-19; RB211-524H2-19; RB211-524H2-T-19; RB211-524H-36; RB211-524H-T-36; RB211-535E4-37; RB211-535E4-B-37; RB211-535E4-B-75; and RB211-535E4-C-37 turbofan engines. This proposed AD was prompted by an investigation by RR concluding that certain intermediate-pressure (IP) turbine discs produced before 1997 by a certain supplier may contain steel inclusions. This proposed AD would require removal of the affected IP turbine discs to inspect them for steel inclusions, and removal from service if the discs fail the inspection. This proposed AD would also require removal from service of some IP turbine discs at reduced life limits. We are proposing this AD to prevent uncontained IP turbine disc failure, engine failure, and damage to the airplane.

DATES: We must receive comments on this proposed AD by [insert date 60 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- Mail: Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- Fax: 202-493-2251.

For service information identified in this proposed AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-245418 or e-mail from http://www.rolls-royce.com/contact/civil_team.jsp, or download the publication from <https://www.aeromanager.com>. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: 800-647-5527) is the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7143; fax: 781-238-7199; e-mail: alan.strom@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-0482; Directorate Identifier 2012-NE-14-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2012-0060, dated April 18, 2012 (referred to after this as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

The inspection of several intermediate pressure (IP) turbine discs at past engine overhauls identified the presence of steel inclusions in these parts. Further investigation concluded that all affected parts were manufactured from billets produced before 1997 at a certain supplier who also melted steel in the same furnaces. Initial engineering evaluation concluded that the lives of the parts would not be affected by the presence of the said steel inclusions. This evaluation has been recently repeated, utilising improved structural analysis, and it is now concluded that the currently published lives of the components cannot be supported for some discs with a steel inclusion.

You may obtain further information by examining the MCAI in the AD docket.

Relevant Service Information

RR has issued RB211-524G, 524H, and 535E4 Propulsion Systems Alert Service Bulletin No. RB.211-72-AG493, Revision 1, dated November 11, 2011. The actions described in this service information are intended to confirm the presence or absence of steel inclusions on the affected IP turbine discs, and to require removal of certain discs at new lower life limits.

FAA’s Determination and Requirements of This Proposed AD

This product has been approved by the United Kingdom and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated

all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

This proposed AD would require removal of the affected IP turbine discs to inspect them for steel inclusions, and if found, this AD would require removal from service. This proposed AD would also impose a new lower life limit on affected IP turbine discs.

Costs of Compliance

We estimate that this proposed AD would affect about 200 engines installed on airplanes of U.S. registry. We also estimate that it would take about 12.5 work-hours per engine to inspect an IP turbine disc. The average labor rate is \$85 per work-hour. In addition, 77 discs must be removed earlier than the existing Airworthiness Limitation Section requires. A prorated replacement IP turbine disc would cost about \$9,925 per engine. We also estimate the cost of replacing a disc if it fails the inspection would be \$225,000. Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be \$976,725.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by

prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Rolls-Royce plc: Docket No. FAA-2012-0482; Directorate Identifier 2012-NE-14-AD.

(a) Comments Due Date

We must receive comments by [insert date 60 days after date of publication in the FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Rolls-Royce plc (RR) RB211-524G2-19; RB211-524G2-T-19; RB211-524G3-19; RB211-524G3-T-19; RB211-524H2-19; RB211-524H2-T-19; RB211-524H-36; RB211-524H-T-36; RB211-535E4-37; RB211-535E4-B-37; RB211-535E4-B-75; and RB211-535E4-C-37 turbofan engines.

(d) Reason

This AD was prompted by an investigation by RR concluding that certain intermediate-pressure (IP) turbine discs produced before 1997 by a certain supplier may contain steel inclusions. We are issuing this AD to prevent uncontained IP turbine disc failure, engine failure, and damage to the airplane.

(e) Actions and Compliance

Unless already done, do the following actions.

(f) Disc Inspection

After the effective date of this AD, use Appendix 1 and Appendix 2 of RR RB211-524G, 524H, and 535E4 Propulsion Systems Alert Service Bulletin (ASB) No. RB.211-72-AG493, Revision 1, dated November 11, 2011; to determine if the IP turbine disc is below or above the inspection threshold.

(1) If below the inspection threshold then clean, demagnetize, and perform a Superconductive Quantitative Inductive Device (SQUID) inspection of the disc at the next shop visit or before the disc reaches the inspection threshold, whichever is later. Use Appendix 4 of RR RB211-524G, 524H, and 535E4 Propulsion Systems ASB No. RB.211-72-AG493, Revision 1, dated November 11, 2011, to perform the SQUID inspection.

(2) If above the inspection threshold, clean, demagnetize and perform a SQUID inspection of the disc if in the shop or, at the next shop visit, whichever occurs first. Use Appendix 4 of RR RB211-524G, 524H, and 535E4 Propulsion Systems ASB No. RB.211-72-AG493, Revision 1, dated November 11, 2011, to perform the SQUID inspection.

(3) Do not return to service any disc that fails the inspection required by this AD.

(g) Disc Life Reduction

(1) After the effective date of this AD, use Appendix 2 of RR RB211-524G, 524H, and 535E4 Propulsion Systems ASB No. RB.211-72-AG493, Revision 1, dated November 11, 2011, to determine the new lower life of affected IP turbine disc(s).

(2) Remove from service any disc at the next shop visit or before it exceeds its new lower life limit, whichever is later, as found in Appendix 2 of RR RB211-524G, 524H, and 535E4 Propulsion Systems ASB No. RB.211-72-AG493, Revision 1, dated November 11, 2011.

(3) Do not return to service any disc that exceeds its new lower life limit, as found in Appendix 2 of RR RB211-524G, 524H, and 535E4 Propulsion Systems ASB No. RB.211-72-AG493, Revision 1, dated November 11, 2011.

(h) Definition of Shop Visit

For purposes of this AD, a shop visit is defined as induction into the shop where the IP and low pressure (LP) turbine module is removed from the engine, and any casing is removed from the IP and LP turbine module.

(i) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(j) Related Information

(1) For more information about this AD, contact Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7143; fax: 781-238-7199; e-mail: alan.strom@faa.gov.

(2) European Aviation Safety Agency AD 2012-0060, dated April 18, 2012, and Rolls-Royce plc RB211-524G, 524H, and 535E4 Propulsion Systems ASB No. RB.211-72-AG493, Revision 1, dated November 11, 2011, pertain to the subject of this AD.

(3) For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-245418 or e-mail from http://www.rolls-royce.com/contact/civil_team.jsp, or download the publication from <https://www.aeromanager.com>. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on June 25, 2012.

Peter A. White,
Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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